Nuytsia The journal of the Western Australian Herbarium

22(1): 17–29 Published online 23 March 2012

Two new mallee box species (*Eucalyptus* sect. *Adnataria* ser. *Lucasianae*; Myrtaceae) from the Pilbara region of Western Australia

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Abstract

Nicolle, D. & French, M.E. Two new mallee box species (*Eucalyptus* sect. *Adnataria* ser. *Lucasianae*; Myrtaceae) from the Pilbara region of Western Australia. *Nuytsia* 22(1): 17–29 (2012). Two new species are described, both which have previously been included in *E. lucasii* Blakely, viz: *E. aridimontana* D.Nicolle & M.E.French *sp. nov*., known from high mountain ridges of the Hamersley Range, and *E. rowleyi* D.Nicolle & M.E.French *sp. nov.,* known from plains of the De Grey River catchment to the north-east of the Hamersley Range. Both species differ from *E. lucasii* in their adult leaves which age to green and/or glossy, and in their thickened pedicels and peduncles (among other characteristics). *Eucalyptus lucasii*, as now circumscribed, is a widespread species restricted to watercourses and flood-out plains south of the Pilbara region. A key to *E.* ser. *Lucasianae* Chippend. and distribution maps for *E. lucasii*, *E. aridimontana* and *E. rowleyi* are provided.

Introduction

The two new species described here have long been included in *Eucalyptus lucasii* Blakely, the 'Barlee box' with a widespread but scattered distribution in the central interior of Western Australia. The two new species are endemic to the Pilbara region of Western Australia, which is an area undergoing intensive open-cut mining activity for the extraction of iron-ore. Specimens of each of the new species were collected as early as 1954 for *E. rowleyi* D.Nicolle & M.E.French (on the road south of Roy Hill; *H.F. & M. Broadbent* 2021A) and 1983 for *E. aridimontana* D.Nicolle & M.E.French (on the access road to the summit of Mount Nameless; *M.I.H. Brooker* 8226). From the time of these earliest collections, a number of botanists have recognised these Pilbara populations as potentially distinct taxa on the basis of their habitat and morphology, which is inconsistent with typical *E. lucasii*, which occurs outside the Pilbara region (Figure 1). Over the last twenty years, many new populations of the two new species have been collected, as access to the region has become easier and as a result of flora surveys associated with mining activity in the region.

The two new species and *E. lucasii* are part of *E.* subg. *Symphyomyrtus* (Schauer) Brooker sect. *Adnataria* L.D.Pryor & L.A.S.Johnson ex Brooker, a taxonomically large section, with most species indigenous to eastern and northern Australia, where they are one of the most common components of woodland vegetation, and with relatively few species occurring in south-western Australia.

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ISSN 2200-2790 (Online)
ISSN 0085-4417 (Print)

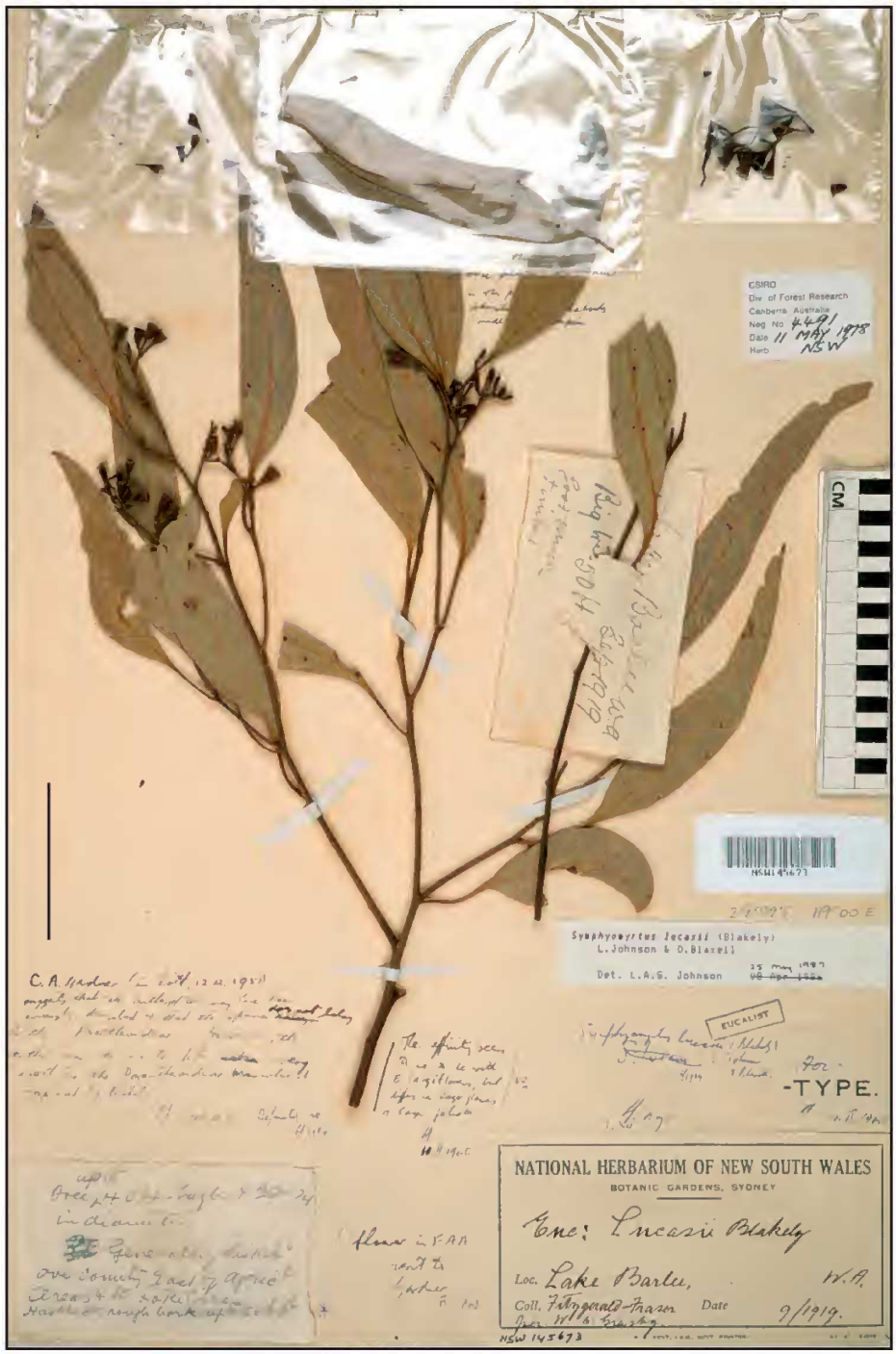

Figure 1. Holotype of *Eucalyptus lucasii* (*C. Fitzgerald-Fraser* per *W.C. Grasby s.n.*), scale = 5 cm.

Methods

All specimens of the newly described species and the related species *E. lucasii* and *E. petraea* D.J.Carr & S.G.M.Carr that are incorporated into the collections at PERTH and AD have been examined, including type material. Digitised images of type specimens from NSW and K have also been examined. Descriptive data for the new species have been taken from both dried herbarium specimens and cultivated live material of known and specimen-vouchered origin. For both the new species, only selected specimens from a larger collection of examined specimens have been cited here, with specimens preferentially chosen to cover the geographical range and morphological variation within these taxa, and with duplicate specimens in multiple Australian herbaria where available.

Extensive field observations of wild populations of the new species and related taxa have been made over the last 18 years, including over 40 separate field trips (*c.* 300 field days) dedicated to collecting eucalypt taxa throughout W.A., in addition to numerous other field trips examining related eucalypt taxa from elsewhere in Australia. Both newly described species and all related taxa have been examined and collected in the field, many with accompanying seed collections (see below). Field studies of wild populations over a number of years have permitted the observation of habit and bark characteristics, habitat preferences, and life histories of taxa following events such as wildfire. Descriptive data for the new taxa include field-recorded characteristics including habit and bark characteristics, seasonal leaf colour and sheen, inflorescence orientation and flower colour.

Both the new species were included in *E. lucasii* by Brooker and Kleinig (2004). Multiple populations of the two newly described species and of *E. lucasii* (with which they have previously been included) have been grown under uniform conditions at Currency Creek Arboretum in S.A. (Nicolle 2003) for a number of years, with some populations of both new taxa having reached maturity (flowered) in the arboretum. Specifically, F1 progeny from the following specimens have been grown: *Eucalyptus lucasii – D. Nicolle* 545 (W of Wiluna), *D. Nicolle* 4283 *& M.E. French* (near Kumarina roadhouse); *E. aridimontana – D. Nicolle* 1191 (Mt Nameless), *D. Nicolle* 5778 *& M.E. French* (Mt Sheila) and *E. rowleyi – D. Nicolle* 4277 *& M.E. French* (NE of Balfour Downs Stn), *D. Nicolle* 4279 *& M.E. French* (type locality; NE of Balfour Downs Stn), *D. Nicolle* 4281 *& M.E. French* (S of Roy Hill).

The plants growing at the arboretum have been grown from seed collected from wild populations with accompanying voucher herbarium specimens. Some of the descriptive data for the new taxa have been taken from seedlings and adult characteristics obtained from these cultivated plants. Ongoing observations of cultivated plants have enabled the study of developmental morphology in the taxa, including leaf ontogeny related to plant maturity, seasonal leaf colour variation and inflorescence development.

Taxonomy

Eucalyptus ser. *Lucasianae* Chippend., *Fl. Australia* 19: 389 (1988). *Type*: *Eucalyptus lucasii* Blakely.

Eucalyptus ser. *Lucasianae* subser. *Cupreanae* Brooker & Hopper, *Nuytsia* 9(1): 64 (1993). *Type*: *Eucalyptus cuprea* Brooker & Hopper.

Eucalyptus ser. *Vagitae* D.Nicolle, *J. Adelaide Bot. Gard.* 19: 91 (2000). *Type*: *Eucalyptus lansdowneana* F.Muell. & J.Brown.

The taxonomic placement of *E. lucasii* and related taxa has had a complex recent history. In the most recent classification of all the eucalypts, Brooker (2000) placed *E. lucasii* in *E.* ser. *Buxeales* Blakely with 26 other species from southern and eastern Australia. In the same treatment, Brooker erected two subseries for *E.* ser. *Buxeales,* which he differentiated on the timing of the dehiscence and loss of the outer operculum, viz. *E.* subser. *Amissae* Brooker (outer operculum lost early in bud development) in which Brooker placed *E. lucasii*, *E. cuprea*, *E. absita* Grayling & Brooker and ten other species, and *E.* subser. *Continentes* Brooker (outer operculum held till flowering) in which Brooker placed *E. petraea*, *E. lansdowneana* and another 11 species. We regard the differentiation of these subseries based on a single character (which we consider to be variable within each species) is unlikely to represent the true evolution of these taxa, especially considering the morphological similarity of *E. lucasii*, *E. petraea* and *E. cuprea* (e.g. *E. petraea* and *E. cuprea* appear to differ only in fruit size). The classification of Brooker (2000) contrasts with earlier accounts by Chippendale (1988) and Brooker and Hopper (1993), each of whom place *E. lucasii* in *E.* ser. *Lucasianae*. Brooker and Hopper (1993) also include *E. petraea* and *E. cuprea* in *E.* ser. *Lucasianae*, and divide the series into two subseries based on bark morphology and adult leaf gloss (see below for a discussion of these subseries). Nicolle (2000) erected the monotypic series *E.* ser. *Vagitae* to accommodate *E. lansdowneana*; however, we now regard this species as best placed with *E. lucasii*, *E. petraea* and the two new species described here, based on their distinctive morphology.

In summary, we here resurrect and recircumscribe *E.* ser. *Lucasianae* (following Brooker & Hopper 1993) to include *E. lucasii*, *E. petraea*, *E. lansdowneana*, *E. cuprea*, *E. absita* and the two new species described here. We distinguish *E.* ser. *Lucasianae* within the genus by the combination of the following characteristics: *E.* subg. *Symphyomyrtus* – cotyledons folded in seeds, buds bi-operculate, seeds with ventral or terminal hilum, seed coat formed from both integuments; *E.* sect. *Adnataria* – seeds with ventral hilum, cotyledons reniform, leaf venation usually densely reticulate, anthers not versatile; *E.* subsect. *Apicales* Brooker – anthers erect at tip of filament, inflorescences commonly terminal or appearing terminal and *E.* ser. *Lucasianae* – mallees, inflorescences arranged on leafless ends of branches with a terminal usually aborting vegetative bud, outer stamens without anthers, with a south-western Australian distribution.

Seven species are here recognised in *E.* ser. *Lucasianae*, six of which are endemic to Western Australia and one species endemic to South Australia. The series has a very widespread but scattered distribution in western and southern Australia, in a region approximately bounded by the Great Sandy Desert (W.A.) to the north, Badgingarra (W.A.) to the south-west and the Gawler Ranges (S.A.) to the east. This region is otherwise largely devoid of *E.* sect. *Adnataria* taxa, which is usually a common component of eucalypt woodlands in northern, eastern and south-eastern Australia.

Brooker and Hopper (1993) recognised two subseries within *E.* ser. *Lucasianae,* based on supposed differences in bark morphology and adult leaf gloss; viz. *E.* subser. *Lucasianae*, distinguished as having completely smooth bark and dull adult leaves, and *E.* subser. *Cupreanae*, distinguished as having some rough bark and glossy adult leaves. The authors do not list the taxa they include in each of these subseries. In any case, we find that the characteristics that Brooker and Hopper (1993) use to distinguish these subseries are not mutually exclusive and that the distinction of the subseries completely break down when the two new species described here are considered (both the new species can be smooth-barked or have some rough bark and have dull to glossy adult leaves).

Key to the taxa of *Eucalyptus* series *Lucasianae.*

1. Flowers crimson. (Gawler Ranges, South Australia) ..... **E. lansdowneana**

1: Flowers white. (Western Australia)

2. Adult leaves consistently glossy and dark green. (SW of line Mt Magnet–Menzies–Rawlinna)

3. Fruits 7–10 mm long; 7–10 mm wide ..... **E. petraea**

3: Fruits 5–7 mm long; 4–5 mm wide

4. Fruit disc thick ..... **E. cuprea**

4: Fruit disc thin and inward sloping ..... **E. absita**[1]

2: Adult leaves dull (at least when young, but aging glossy in *E. aridimontana* and *E. rowleyi*), green to bluish. (NE of line Mt Magnet–Menzies–Rawlinna)

5. Adult leaves consistently dull and bluish, oil glands very sparse; fruiting peduncles and pedicels slender. (S of Hamersley Range) ..... **E. lucasii**

5: Adult leaves maturing glossy and/or green, oil glands scattered to moderately dense; fruiting peduncles and pedicels thickened. (Hamersley Range and plains to the NE)

6. Adult leaves 10–26(–32) mm wide; fruits barrel-shaped (high mountain ridges) ..... **E. aridimontana**

6: Adult leaves (15–)25–45 mm wide; fruits cylindrical or slightly barrel-shaped to urceolate or slightly campanulate (low plains and creeks) ..... **E. rowleyi**

Eucalyptus aridimontana D.Nicolle & M.E.French, *sp. nov.*

Distinguitur a *Eucalypto lucasii* foliis adultis crassioribus viridioribus saepe ubi vetis nitidis, glandulis oleis dispersis vel moderate densis, pedunculis crassioribus, pedicellis angulatis et fructibus consistentem doliiformibus margine crassa.

Typus: summit of Mount Nameless, between Tom Price town and mine, Western Australia, 4 June 2002, *A.V. Slee* 4409 *& J.Connors* (*holo*: PERTH 06214118; *iso*: AD, CANB, NSW).

Eucalyptus sp. Mt King (S. van Leeuwen 3605), Western Australian Herbarium, in *FloraBase*, http://florabase.dec.wa.gov.au/ [accessed December 2011].

Eucalyptus sp. Mt Nameless (D. Nicolle 1191), Western Australian Herbarium, in *FloraBase*, http://florabase.dec.wa.gov.au/ [accessed December 2011].

Eucalyptus areomontana D.Nicolle ms, in Council of Heads of Australasian Herbaria, *Australian Plant Census*, http://www.chah.gov.au/apc/index.html [accessed December 2011]

Mallee, 4–6 m tall, lignotuber present. *Bark* smooth throughout or with some persistent ribbony-rough bark on the lower stems up to one metre; smooth bark grey to yellow-tan over cream, decorticating

[1]The status of *E. absita* requires further investigation as the species may represent very old but persisting hybrid individuals of *E. cuprea* x *E. loxophleba.*

in strips and short ribbons. *Cotyledons* reniform. *Seedling leaves* dull, green to blue-green, not waxy, broad-lanceolate, to 55 mm long × 25 mm wide. *Adult leaves* petiolate; lamina dull but sometimes maturing glossy, green to blue-green, (narrow-lanceolate to) lanceolate, (50–)70–145 mm long × (9–)10–26(–32) mm wide; reticulation dense, intramarginal vein 0.5–1 mm from lamina margin; oil glands scattered to moderately-dense, mainly intersectional. *Inflorescences* axillary and terminal, unbranched, 7- or 9-flowered; peduncles thickened, terete to angular, 6–16 mm long; pedicels thickened, angular, tapering to hypanthium, 1–6 mm long. *Flower buds* clavate, 3–4 mm wide; operculum conical. *Flowers* white; outer stamens lacking anthers (staminodes). *Fruits* tapering to thickened, angular or bi-ribbed pedicel (with lower part of fruit also angular), barrel-shaped, 4.5–9 mm long × 3.5–6 mm wide; disc steeply descending; valves 4 or 5, below rim level. *Seeds* brown, compressed-ovoid, 1.5–2 mm long, reticulum finely-textured. (Figures 2, 3)

Diagnostic features. Distinguished from *E. lucasii* by its thicker, greener adult leaves that often age glossy and have scattered to moderately-dense oil glands, the thicker peduncles, the thicker, angular pedicels, and the consistently barrel-shaped, thicker-rimmed fruits.

Selected specimens examined. WESTERN AUSTRALIA: top of Mt Nameless, 8 July 1983, *M.I.H. Brooker* 8226 (AD, CANB, PERTH); *c.* 100 m from Mt Bruce summit on walking track, west Hamersley Range, 14 June 2002, *M.E. French* 1440 (PERTH); *c.* 150 m ex Mt Bruce Summit, on walking track, 50 m W GPS, Hamersley Range, 14 June 2002, *M.E. French* 1441 (PERTH); Mt Nameless, road to summit, 29 Nov. 1994, *D. Nicolle* 1191 (AD); Mt Nameless, S side of road half way up, 28 July 2010, *D. Nicolle* 5766 *& M.E. French* (AD, PERTH); Mt Nameless, S side of road one third way up at 1088 m, 28 July 2010, *D. Nicolle* 5769 *& M.E. French* (AD, PERTH); Mt Sheila summit at 997 m, 28 July 2010, *D. Nicolle* 5778 *& M.E. French* (AD, PERTH); summit of Mt Nameless, between Tom Price town and mine, 4 June 2002, *A.V. Slee* 4408, 4409 *& J. Connors* (AD, CANB, PERTH); eastern end of Mt Truchanas, 4.6 km NW of the Mt Truchanas summit, 10 Sep. 1996, *S. van Leeuwen* 2713 (AD, CANB, PERTH); Mt Lockyer, 13 km ESE of Mt George, 1 Aug. 1998, *S. van Leeuwen* 3572 (CANB, PERTH); summit 2.2 km N of Bold Cliff, 18.6 km E of Mt Sheila, 5 Aug. 1998, *S. van Leeuwen* 3591 (CANB, PERTH); Mt Margaret, 17.8 km NNE of Mt Lois, 5 Aug. 1998, *S. van Leeuwen* 3598 (CANB, PERTH); Mt King, 22 km NNE of Mt Frederick, 5 Aug. 1998, *S. van Leeuwen* 3606 (CANB, PERTH); Mt Frederick, 22.6 km NNW of Mt Vigors, 6 Aug. 1998, *S. van Leeuwen* 3610 (CANB, PERTH).

Distribution and habitat. Restricted to the central-northern part of the Hamersley Range in the Pilbara, in the area bounded by Mt Margaret in the north, Mt Lockyer in the east, between Mt Bennett and Mt Meharry in the south and Mt Sheila, Mt Sampson and Mt Truchanas in the west (Figure 4). The species occurs on skeletal soils of hematite, on the slopes, ridges and summits of high mountains in this area, mainly between 900 m and 1,235 m altitude. Most specimens have been collected from Mt Bruce, Mt Nameless and Mt Sheila due to their relatively easy access compared to other mountains in the area, however surveys by Stephen van Leeuwen (Department of Environment and Conservation) indicate that the species commonly occurs on high mountains in the area. *Eucalyptus aridimontana* grows in open mallee vegetation with a *Triodia* ground-storey, usually mixed with other eucalypt species including *Corymbia hamersleyana*, *E. gamophylla*, *E. kingsmillii* subsp. *kingsmillii*, *E. leucophloia* subsp. *leucophloia*, *E. pilbarensis* and *E. repullulans*.

Etymology. From the Latin *aridus* (dry) and *montana* (mountain), referring to its habitat, especially in comparison to *E. lucasii* and *E. rowleyi*.

Figure 2. Holotype of *Eucalyptus aridimontana* (*A.V. Slee* 4409 *& J.Connors*), scale = 5 cm.

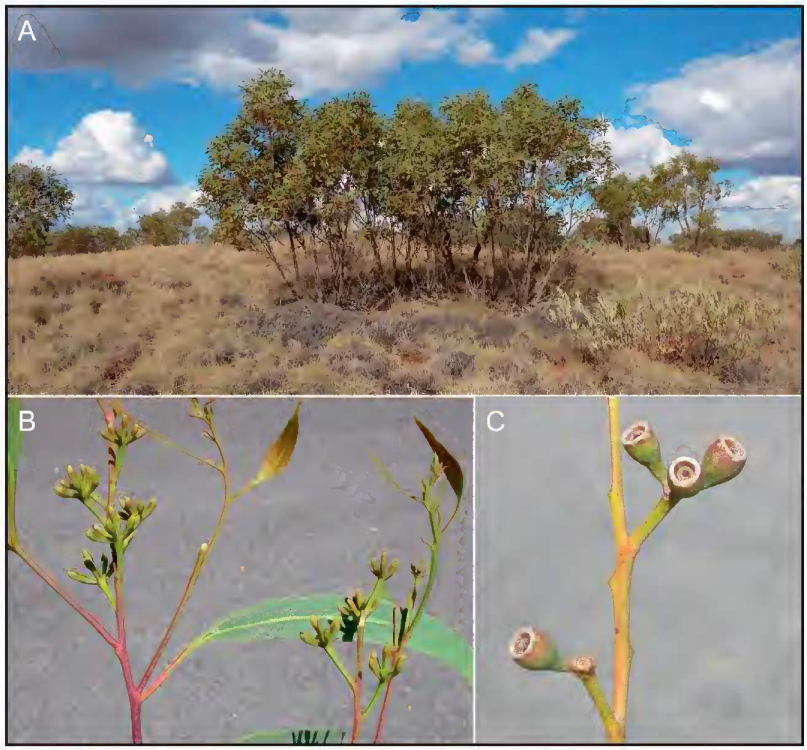

Figure 3. *Eucalyptus aridimontana*. A – habitat and habit on Mount Sheila summit, *D.Nicolle* 5778 *& M.E.French*; B – adult leaves and immature flower buds, F1 of *D. Nicolle* 1191; C – fruits, F1 of *D. Nicolle* 1191.

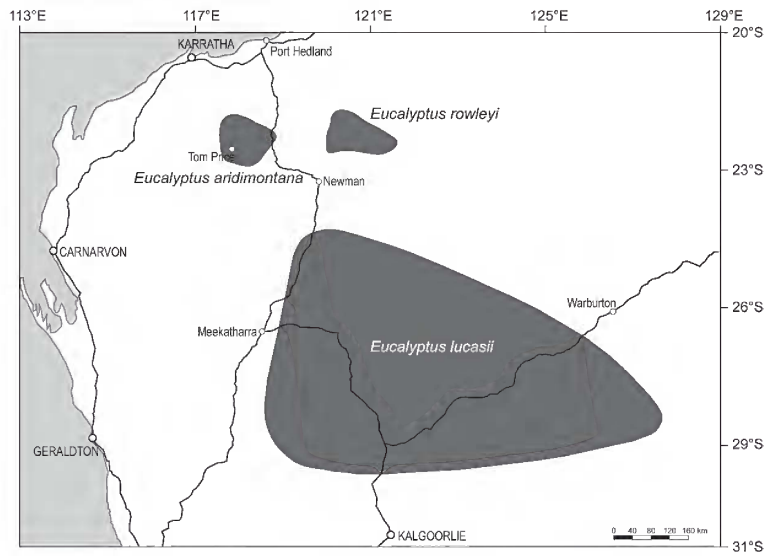

Figure 4. Known distributional limits of *Eucalyptus lucasii*, *E. aridimontana* and *E. rowleyi*.

Conservation status. Although many populations are under potential threat from large-scale iron-ore mining operations, the species is also known from a number of populations in Karijini National Park and is therefore considered secure.

Notes. Eucalyptus aridimontana was previously included in *E. lucasii*, which differs in its thinner, consistently dull and bluish adult leaves that have very sparse oil glands evident, slender peduncles, slender, terete pedicels and cupular to slightly obconical (or sometimes slightly campanulate, shortly barrel-shaped or shortly cylindrical), thinner-rimmed fruits. The fruits of *E. lucasii* are variable in shape but are always thin-rimmed and smooth, whilst those of *E. aridimontana* are consistently barrel-shaped, thick-rimmed and often angled on the lower part of the fruit where tapering to the thickened pedicels. The habitat of *E. aridimontana* is also quite different from *E. lucasii*, the latter species being restricted to lowland sites, often in ephemeral watercourses and flood-out plains, on soils of reddish clay-loams or sand over clay. *Eucalyptus lucasii* has a more widespread distribution south of the Hamersley Range, bounded by the Great Northern Highway in the west, Lake Ballard in the South (though not associated with the lake itself) and extending east into the Great Victoria Desert to near Ilkurlka Roadhouse and north into southern parts of the Little Sandy Desert as far as Kumarina Roadhouse (Figure 4).

Eucalyptus rowleyi D.Nicolle & M.E.French, *sp. nov.*

Distinguitur a *Eucalypto lucasii* foliis adultis plerumque latioribus crassioribus viridioribus saepe ubi vetis nitidis, glandulis oleis dispersis vel moderate densis, pedunculis crassis, pedicellis crassis angulatisque, alabastris majoribus, et fructibus plerumque majoribus cylindricibus vel leviter doliiformibus vel urceolatibus vel leviter campanulatibus margine crassa.

Typus: north of Newman towards Roy Hill, Western Australia [precise locality withheld for conservation reasons], 1 November 1983, *M.I.H. Brooker* 8327 (*holo*: PERTH 01309749; *iso*: AD, CANB).

Eucalyptus sp. Rudall River (D. Nicolle & M. French DN 4279), Western Australian Herbarium, in *FloraBase*, http://florabase.dec.wa.gov.au/ [accessed December 2011].

Eucalyptus rowleyi D.Nicolle ms, in Council of Heads of Australasian Herbaria, *Australian Plant Census*, http://www.chah.gov.au/apc/index.html [accessed December 2011].

Mallee, 3–5 m tall, lignotuber present. *Bark* smooth throughout, not powdery, grey to pale tan-orange over cream, decorticating in strips and short ribbons. *Cotyledons* reniform. *Seedling leaves* dull, blue-green, not waxy, ovate, to 100 mm long × 60 mm wide. *Adult leaves* petiolate; lamina dull at first but often maturing glossy, green to slightly blue-green, lanceolate to broad-lanceolate, (70–)80–145 mm long × (15–)25–45 mm wide; reticulation dense, intramarginal vein 1–1.5 mm from lamina margin; oil glands scattered to moderately-dense, mainly intersectional. *Inflorescences* axillary and terminal, unbranched, 7- or 9-flowered; peduncles thickened, angular, 5–22(–30) mm long; pedicels thickened, angular to bi-ribbed, tapering to hypanthium, 2–6(–10) mm long. *Flower buds* clavate, 3–5 mm wide; operculum conical, 2–4 mm long. *Flowers* white; outer stamens lacking anthers (staminodes). *Fruits* tapering to thickened, angular or bi-ribbed pedicel, cylindrical or slightly barrel-shaped to urceolate or slightly campanulate, 6–10 mm long × 5–87 mm wide; disc steeply descending; valves (3)4 or 5(6), below rim level. *Seeds* brown to dark brown, compressed-ovoid, 1.5–2 mm long, reticulum finely-textured. (Figures 5, 6)

Diagnostic features. Distinguished from *E. lucasii* by its generally broader, thicker, and greener adult leaves that often age glossy and have scattered to moderately-dense oil glands, the thickened, angular peduncles, thickened, angular pedicels, larger flower buds, and usually larger, cylindrical or slightly barrel-shaped to urceolate or slightly campanulate, thick-rimmed fruits.

Selected specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 13 Oct. 1975, *H. Demarz* 5695 (PERTH); 6 Jul. 1998, *M.E. French* 628 (PERTH); 26 May 1999, *M.E. French* 868, 869, 870 (PERTH); 8 June 2002, *M.E. French* 1416 (PERTH); 8 June 2002, *M.E. French* 1417 (PERTH); 8 June 2002, *M.E. French* 1424 (PERTH); 8 June 2002, *M.E. French* 1426 (PERTH); 8 June 2002, *M.E. French* 1427 (PERTH); 8 June 2002, *M.E. French* 1428 (PERTH); 9 June 2001, *M.E. French* 1343 (PERTH); 9 June 2001, *M.E. French* 1344 (PERTH); 1 Nov. 1983, *K. Hill* 494, *L. Johnson, D.F. Blaxell, M.I.H. Brooker & W. Edgecombe* (CANB, NSW, PERTH); 25 Nov. 2001, *D. Nicolle* 4277 *& M.E. French* (CANB, PERTH); 25 Nov. 2001, *D. Nicolle* 4279 *& M.E. French* (AD, CANB, PERTH); 25 Nov. 2001, *D. Nicolle* 4281 *& M.E. French* (AD, CANB, PERTH).

Distribution and habitat. Restricted to the plains of the upper De Grey River system, north-east of the Hamersley Range in the area bounded by Marble Bar, Newman and the Rudall River National Park, with three main populations known, viz. east of Nullagine, south of Roy Hill and north-east of Balfour Downs Station (Figure 4). Other populations are likely to occur in this remote and poorly surveyed area. *Eucalyptus rowleyi* occurs on red sandy loams on plains and very minor and broad flood-out plains (similar to the habitat of *E. lucasii*), often in small pure stands or in open mallee vegetation with other eucalypt species including *E. gamophylla–E. odontocarpa* intergrades and *E. victrix*, and usually with a *Triodia* ground-storey.

Etymology. Named after Bruce Rowley (1940–), an expert desert traveller who first encountered the Little Sandy Desert population near Bocrabee Hill.

Conservation status. Recently listed as Priority Three under the Department of Environment and Conservation's (DEC) Conservation Codes for Western Australian Flora. The species occurs in a relatively remote area (although the species can be seen on the Marble Bar road north of Newman), and is not considered to be threatened in the short-term. No populations are known from a conserved area, and mining interests may be a threat to the species over the longer term.

Notes. Eucalyptus rowleyi was previously included in *E. lucasii*, which differs in its generally narrower and thinner, consistently dull and bluish adult leaves which have very sparse, evident oil glands, slender, terete peduncles, slender, terete pedicels, smaller flower buds, and usually smaller, cupular to slightly obconical (or sometimes slightly campanulate, shortly barrel-shaped or shortly cylindrical), thinner-rimmed fruits. *Eucalyptus lucasii* has a more widespread distribution south of the Hamersley Range (Figure 4).

Eucalyptus rowleyi × *E. victrix* L.A.S.Johnson & K.D.Hill

This putative hybrid is known from about six individuals at a single site where both the below-cited specimens were collected. *Eucalyptus rowleyi* and *E. victrix* occur in greater numbers at the site. The putative hybrids can be identified by their morphology, which is intermediate between that of *E. rowleyi* and *E. victrix,* especially with respect to their bark, adult leaves and fruits. Seed has not been collected (and therefore seedlings not grown) from the putative hybrids.

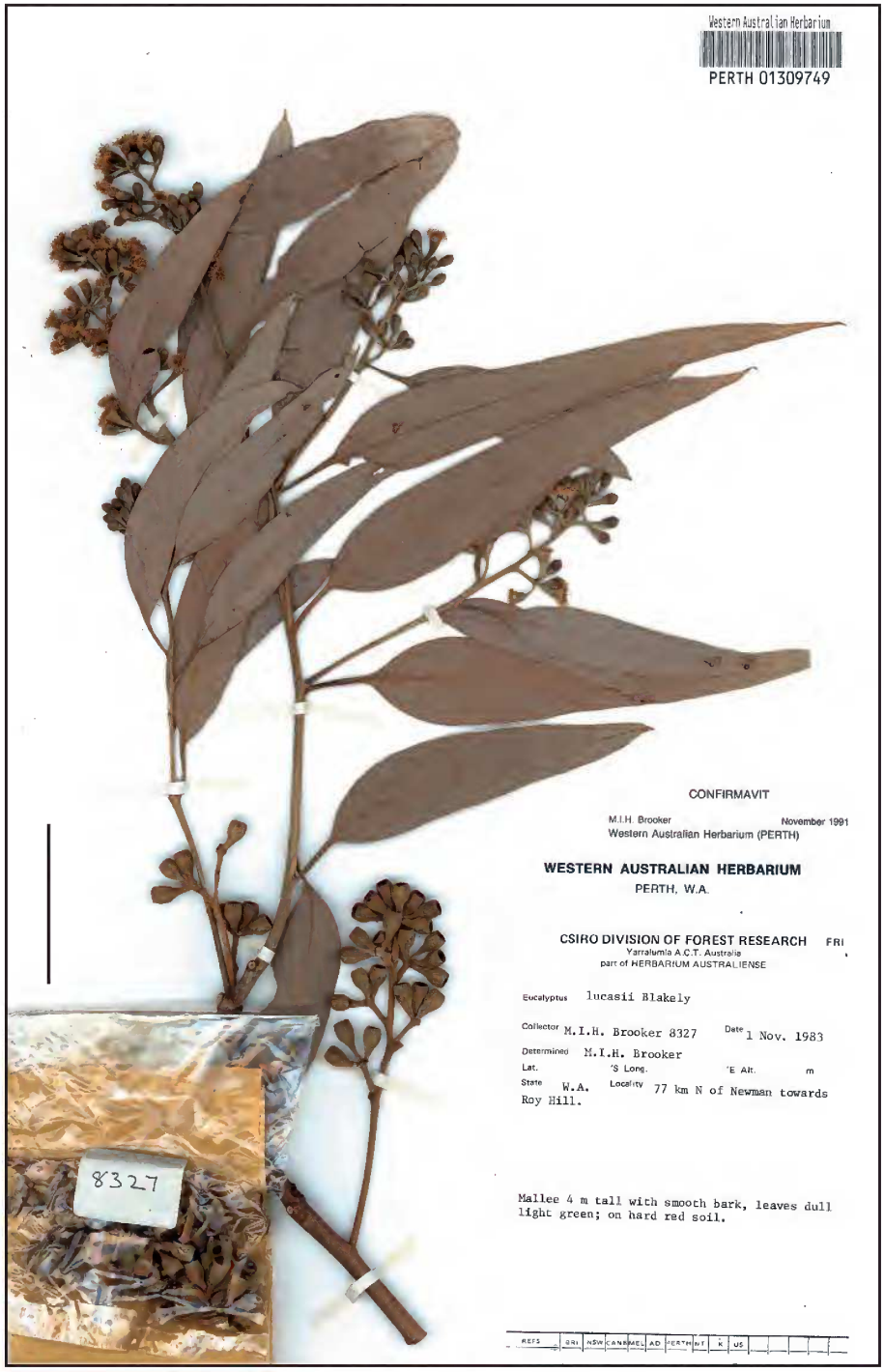

Figure 5. Holotype of *Eucalyptus rowleyi* (*M.I.H. Brooker* 8327), scale = 5 cm.

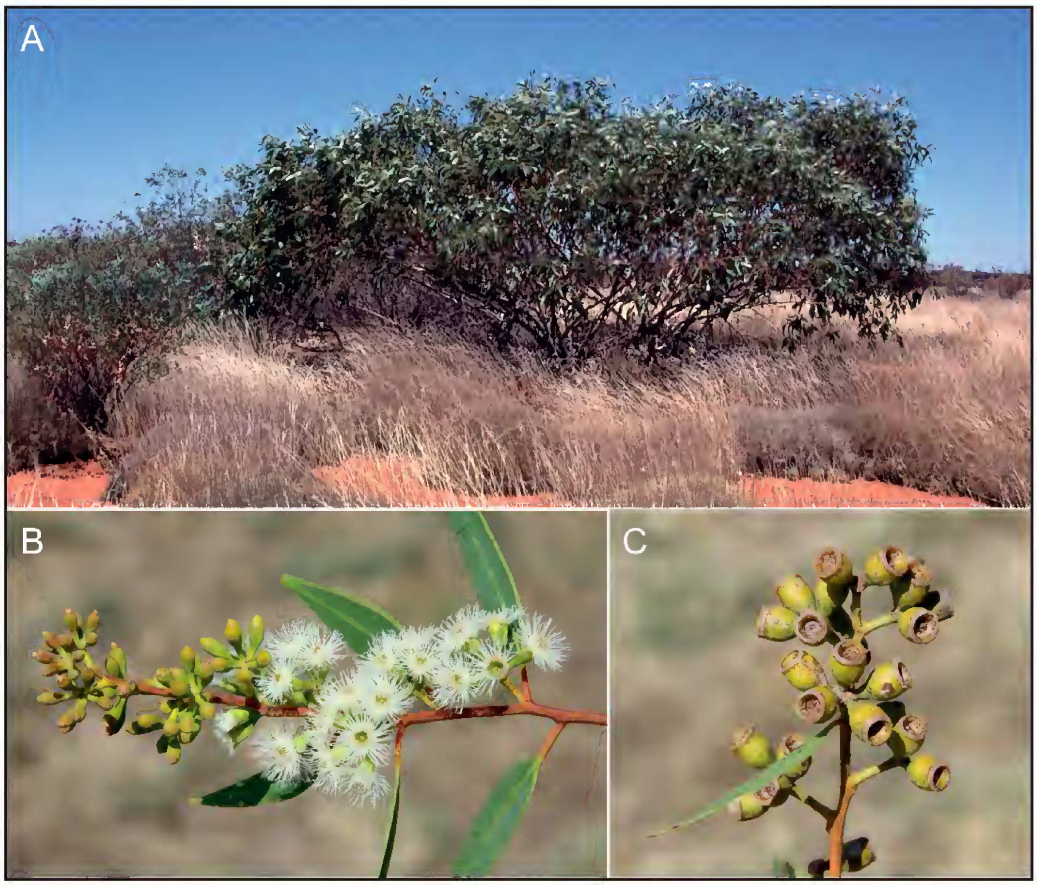

Figure 6. Eucalyptus rowleyi. A – habitat and habit between Bocrabee Hill and Hanging Rock, D. Nicolle 4277 & M.E. French; B – adult leaves, flower buds and flowers, F1 of D. Nicolle 4281 & M.E. French; C – fruits, F1 of D. Nicolle 4281 & M.E. French.

Specimens examined. WESTERN AUSTRALIA: SE of Bocrabee Hill, W of Rudall River N.P., *M.E. French* 628 (AD, PERTH); between Bocrabee Hill and Hanging Rock on Balfour Downs to Rudall River track, 25 Nov. 2001, *D. Nicolle* 4278 *& M.E. French* (CANB, PERTH).

Acknowledgements

We are grateful to staff at the Herbarium of South Australia and the Western Australian Herbarium for ongoing access to the herbarium facilities in each of those States. Specifically, we thank Karina Knight, Cheryl Parker and Skye Coffey at the Western Australian Herbarium for allowing access during their move of premises and for help with locating and scanning types. A number of people have collaborated in field work which involved studying the new species, including Bob Nicolle, Annett Boerner, Detlef Schulze, Marianne Lauerer and Gregor Aas. Annett Boerner kindly drew the distribution maps and prepared the images. Again we thank Ian Brooker for ongoing discussion regarding eucalypt taxonomy, for commenting on the manuscript, and for providing the Latin diagnoses.

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